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Educator Compensation
Reform

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When World Collide!

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From Indicators to Value-Added Learning Outcomes

- Indicator work goes back to the early 1970s
- Systemic Reform in 1980s and 1990s used cohort analysis. A few districts were doing testing in multiple grades to comply with Title I requirements
- NCLB required testing in multiple grades but focused only on attainment – not growth or VA
- SLDS, RttT, and TIF at the federal level began to focus on measures of student growth – expanding to PK-20
- TIF evaluation (round 3), I3, and Private Foundations begin to ask rigorous questions about what works and how to improve the pipeline

Source of Insights

- Value-Added modeling and reporting in Milwaukee, Chicago, and New York City as well as for the state of Wisconsin
- Rigorous program evaluation work in Milwaukee
- Technical Assistance with 33 current TIF grantees
- Work with the Bush Foundation and its 14 grantees and partner state SEAs
- Field work on threats to validity from IT system design flaws, student-teacher matching, and adult-student linkages

Extending the Validity and Use of Value-Added Data

- Two areas of development
  - Classroom assignment and student-teacher matching (validity and accuracy of VA)
    - Implications for data linkages
  - Performance management at the school level
    - Developing VA use cases across performance levels
    - Work system factors that affect data use at school level
- Sociotechnical analysis

Classroom Assignment and Matching

- Purposive assignment
  - Heterogeneous (mix ability levels, demographics, etc…)
  - Homogeneous (sort on ability levels)
  - Vertical and horizontal alignment
  - Ability grouping
  - Split classrooms, looping, team teaching
  - Other cases: Mobility, special education students
- Matching: Attributes
  - Teachers - Classroom management skills, personality, etc…
  - Student - Behavior, special cases, etc…
- Social and technical considerations
  - Value-added
  - Linking students to teachers
  - Organizational design and process of assignment and matching

Value added and assignment / matching

- Extent of unbalanced classrooms?
  - Ex: Teachers w/ strong classroom management skills
- Heterogeneous assignment perceived as more "fair"
- Implications for measuring "true" teacher effectiveness
- Some characteristics not measured in VA model

Assignment and Matching: Linking Students to Teachers in IS

- Verification of student-teacher linkages in data
- Information systems need capture reality of classrooms
- Assignment and matching models for explanatory power in linkage data

Sociotechnical factors in assignment / matching - 1

- Process of assignment and matching in schools
  - Principal led
  - Teams of teachers (within and across grades)
  - School leader/teacher/principal hybrid team
  - Collaborative versus non-collaborative model
  - Timing: End of academic year
- Input variables
  - Test scores, input from teachers/school leaders, principal observation, parent input
- Environmental issues
  - Teacher labor issues (turnover/retention, shortages, teacher allocation)

Sociotechnical factors in assignment / matching - 2

- Contextual factors
  - Levels of complexity
  - Size of school, number of grades served
  - Breadth and depths of courses offered
  - School types
    - Elementary versus high school, charters
  - Demographics of student, teacher population
  - Degrees of community and parental involvement
  - Mobility of students across classrooms or/and schools

Effective data use for instructional decisions

- Race to the Top – 4 goals:
  - design/implement rigorous standards
  - build data systems to measure growth (value-added) and ***inform how to improve instruction***
  - recruit, ***develop, reward, and train effective teachers***
  - turn around lowest achieving schools via innovation
- IES (2009) panel on the use of student achievement data
  - Found little scientific evidence for sound data-based instructional decision making
  - Recommended ***use of data teams, collaboration structures, and integrated data approach***

Performance Management in Accountability-Based Education

- Performance management is one way to address IES panel concerns and RttT goals
  - Emphasizes rigorous base of high-quality data
  - Embodies quality management principles, methods, tools, and processes at every level of the district and school organizations

Performance Management: School Level View - 1

- Schools expected to make sound data-based decisions for classroom improvement
- But, variance in quality of data available and ability to effectively use it
- Rarely use data to determine root causes of re-occurring problems and analyze the impact of initiatives and programs[1]
- Evaluate programs on 'gut-feelings' with little formal analysis or long term planning[2]

[1](Tolley & Shulruf, 2009), [2](Bernhardt, 2004)

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Performance Management: School Level View - 2

- Need for sound organizational models for data analysis
- However, educational administration theory and research in school-staff teams lags behind current team models[3]
- Team-based work structures conflict with current work, training, and reward design for teachers (autonomy, isolation in classroom)[4]

[3](Somech & Drach-Zahavy, 2007), [4](Levine & Marcus, 2010)

Learning Team Design for Effective School Improvement

- Cross-case comparison study of high- and low-performing schools
  - All schools have a team-based structure for school improvement
  - But, variance in design, team membership, emphasis on data, task allocation, and process
  - Some schools emphasize growth, but others do not believe VA (low VA/high attainment) or blame students (low VA/low attainment)
  - Low performing schools do not engage in effective team-based practices and design principles

Recommendations for team-based school improvement design - 1

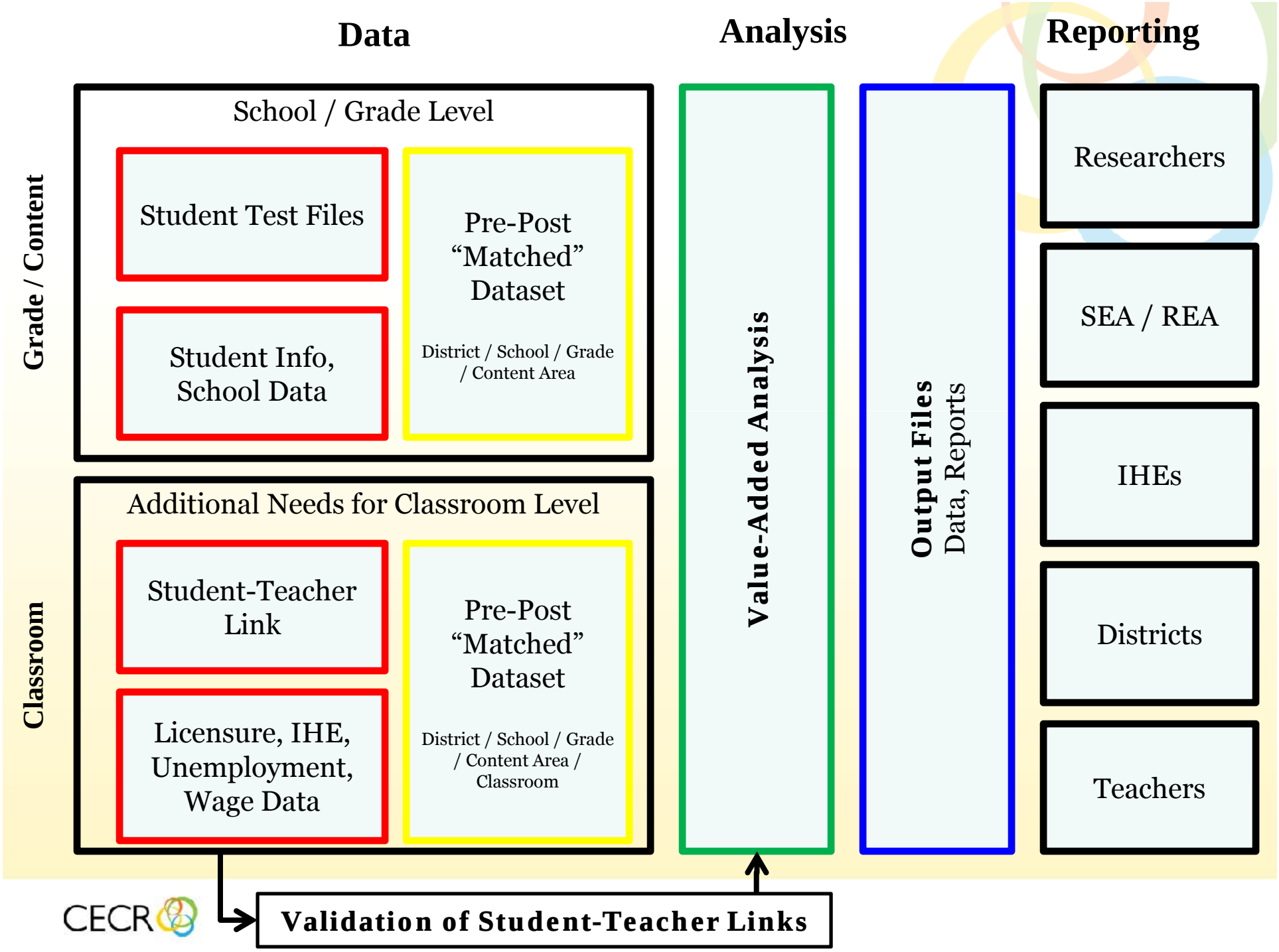
- Team composition
  - Representation of essential learning functions (e.g., reading specialists, math leaders), grades, and school leadership
  - Balance of team member characteristics and strengths
    - Gender, experience (e.g., data analysis, school process, etc…)
- Team process
  - Define goals and membership roles
  - Document and define school improvement planning
  - Develop technical skills of the team
  - Team collaboration and cohesiveness
  - Establish feedback mechanisms/loops

Recommendations for team-based school improvement design - 2

- Define team performance metrics
  - *Process* outcomes (measuring how well team(s) work, team design)
    - Team satisfaction
    - Cohesiveness/collaboration
    - Meeting planning goals, team member responsibilities
  - *Output* outcomes
    - Increase in student growth
    - Close achievement gaps in school
    - Execution of school initiatives, programs

Teacher Effectiveness Initiative

- Partner with higher-education institutions to transform teacher- preparation programs, guaranteeing teacher effectiveness
- Recruit high-caliber students to pursue teaching
- Engage with public officials to reform public policies
- Launch innovative support programs for school leaders and teachers
  - 14 Teacher Preparation Institutions
  - Prepare ~ 50% teachers in three states
  - Guarantee teacher candidate effectiveness in VA terms
  - Other 69% - testing versus assessment


Data
Analysis
Reporting
Grade / Content
School / Grade Level
Student Test Files
Student Info, School Data
Pre-Post "Matched" Dataset
District / School / Grade / Content Area
Classroom
Additional Needs for Classroom Level
Student-Teacher Link
Licensure, IHE, Unemployment, Wage Data
Pre-Post "Matched" Dataset
District / School / Grade / Content Area / Classroom
Value-Added Analysis
Output Files
Data, Reports
Researchers
SEA / REA
IHEs
Districts
Teachers
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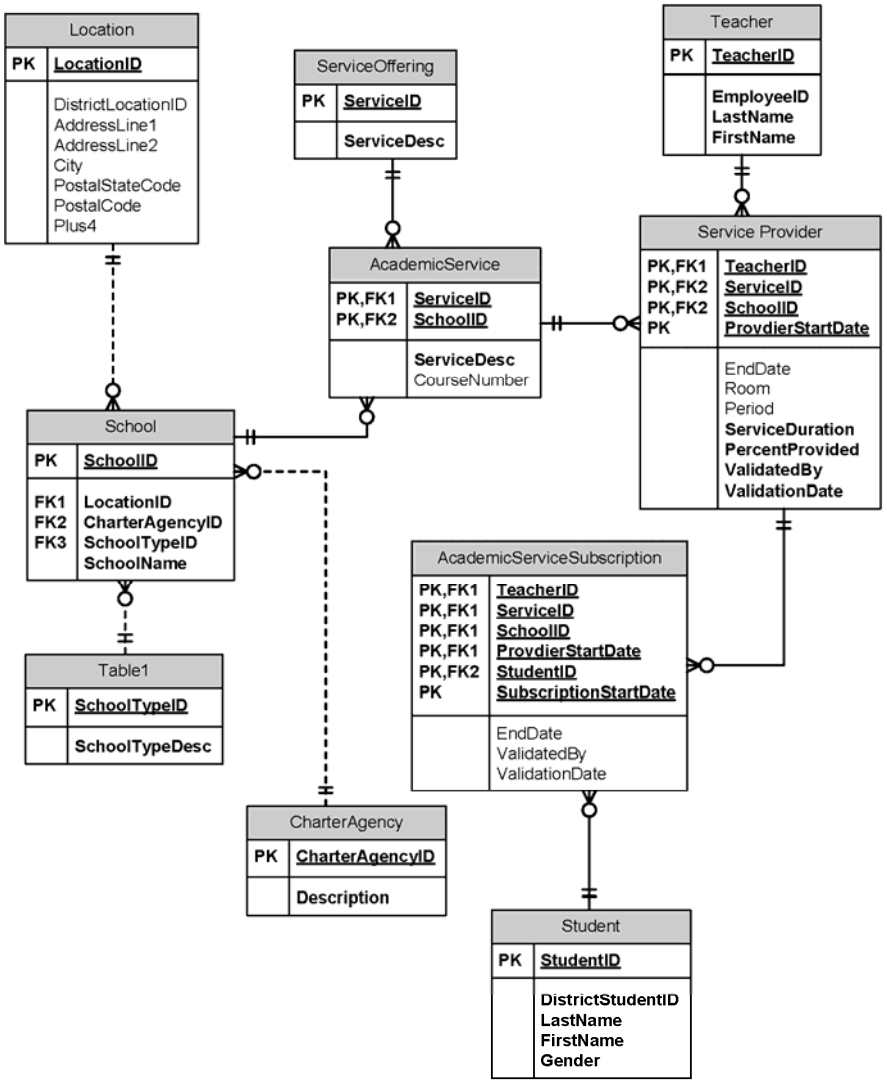
Validation of Student-Teacher Links

What we need is a new data model

- Current extensions of the longitudinal model breaks down once we take differentiated instruction into account
- Notions of course are a dead end for correct attribution of programs and instruction
- New models need to collect assignment of services to students – both programs and in the person of adults
- Building measures of student growth require a student-centric model that deals with the student as a *subscriber to* or *recipient of* services
- Notions of grade, course, and classroom are still important for resource and contract management but are insufficient to track the things that interest us most

Services Data Model



Doing this as a work around until system capacity comes online

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Recommendations and corresponding levels of evidence

1. Make data part of an ongoing cycle of instructional improvement	**Low**
2. Teach students to examine their own data and set learning goals	**Low**
3. Establish a clear vision for schoolwide data use	**Low**
4. Provide supports that foster a data-driven culture within the school	**Low**
5. Develop and maintain a districtwide data system	**Low**

Using Student Achievement Data to Support Instructional Decision Making
What Works Clearing House Practice Guide (Hamilton, et al., 2009)

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Thanks for your attention

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IHE Data

IHE Candidate Data (Who is enrolled)

- Names, IHE ID#, and social security numbers of current and past pre-service teachers and graduates. Should also include basic demographic information like gender, age, ethnicity, residence. Licensure and teacher locator IDs if possible.

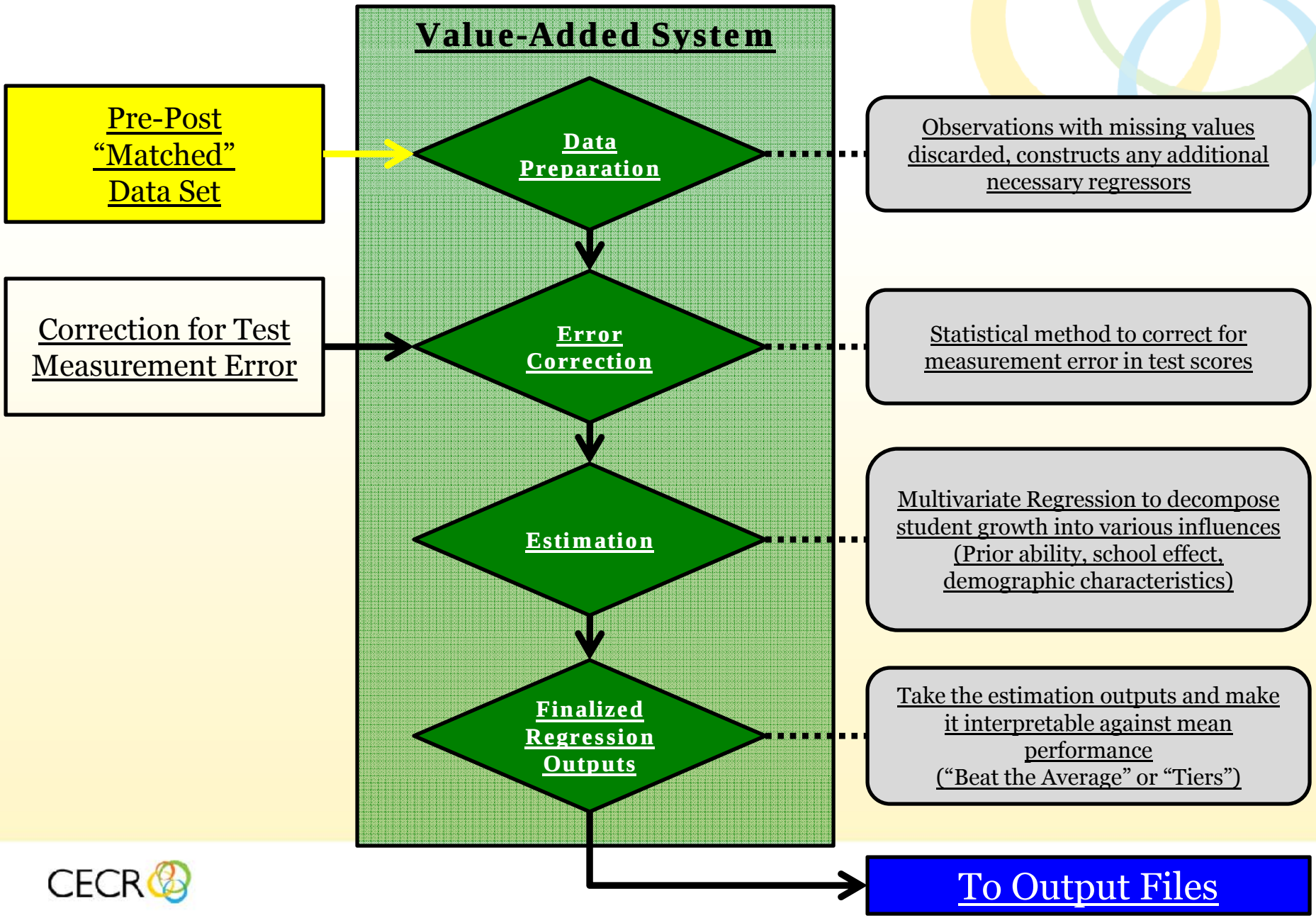
IHE Candidate Attribute Data

- Incoming student data (e.g., GPA, ACT, SAT) and college transcript data (e.g., GPA, completed courses, for current and past pre-service and graduates (keyed with university ID and SS#).

IHE Candidate Programming Data

- Information on incoming student quality, program participation, course outcomes, and measures of teacher preparedness.

Value-Added System – The Value-Added Process



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